

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

## PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

To:  
ANDREW J. GRAY, IV  
MORGAN LEWIS & BOCKIUS LLP  
2 PALO ALTO SQUARE  
3000 EL CAMINO REAL, SUITE 700  
PALO ALTO, CA 94306

Date of mailing  
(day/month/year) **18 APR 2007**

Applicant's or agent's file reference

61127-5001WO

**FOR FURTHER ACTION**

See paragraph 2 below

International application No.

PCT/US05/43937

International filing date (day/month/year)

01 December 2005 (01.12.2005)

Priority date (day/month/year)

02 December 2004 (02.12.2004)

International Patent Classification (IPC) or both national classification and IPC

IPC: **G06T 11/20**

USPC: 345/440,418-420,848,112,133;707/501,1-5,503;715/503,504;702/20

Applicant

TABLEAU SOFTWARE LLC

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☒ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/ US

Mail Stop PCT, Attn: ISA/US  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Facsimile No. (571) 273-3201

Date of completion of this  
opinion

27 January 2007 (27.01.2007)

Authorized officer

Prabodh M. Dharja

Telephone No. 571-272-7668

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.

PCT/US05/43937

**Box No. I Basis of this opinion**

1. With regard to the language, this opinion has been established on the basis of:

- ☒ the international application in the language in which it was filed
- ☐ a translation of the international application into \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing
- ☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper
- ☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.
- ☐ filed together with the international application in electronic form.
- ☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US05/43937

Box No. V Reasoned statement under Rule 43 bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims <u>NONE</u>	YES
	Claims <u>150</u>	NO
Inventive step (IS)	Claims <u>NONE</u>	YES
	Claims <u>150</u>	NO
Industrial applicability (IA)	Claims <u>150</u>	YES
	Claims <u>NONE</u>	NO

2. Citations and explanations:

Please See Continuation Sheet

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/US05/43937

Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

Application No. <u>Patent No.</u>	Publication date <u>(day/month/year)</u>	Filing date <u>(day/month/year)</u>	Priority date (valid claim) <u>(day/month/year)</u>
US 2003/0200034 A1	23/10/2003	02/10/2002	04/10/2001
US 6,750,864 B1	15/06/2004	15/11/2000	15/11/1999
US 6,522,342 B1	18/02/2003	27/01/1999	
US 6,301,579 B1	09/10/2001	20/10/1998	

2. Non-written disclosures (Rules 43bis.1 and 70.9)

<u>Kind of non-written disclosure</u>	Date of non-written disclosure <u>(day/month/year)</u>	Date of written disclosure referring to non-written disclosure <u>(day/month/year)</u>
---------------------------------------	---	--

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US05/43937

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

V. 2. Citations and Explanations:

Claims 1-150 lack novelty under PCT article 33(2), and lacks an inventive step under PCT article 33(3) as being obvious over the combination of Anwar in view of Fellenberg et al., Becker and Gagnon et al.

Anwar teaches method of forming a visual plot using a dataset having a plurality of fields, wherein the dataset contains data that comprises a plurality of tuples, the method comprising: organizing the visual plot into a plurality of panes, wherein each of said panes has at least a first axis and wherein said first axis corresponds to a first field from said plurality of fields; assigning a pane type to each pane in said plurality of panes according to a first type of said first field determining a mark for each pane based on said pane type; and populating the visual plot with said data; dataset is a database; the database is a relational database; the database is a hierarchical database; database is an unstructured database; querying the dataset to obtain retrieved data, and wherein the visual plot is populated with said retrieved data; retrieved data comprises a set of tuples; populating said visual plot comprises associating each tuple of said set of tuples with a pane in said plurality of panes; organizing the visual plot is in accordance with a specification; populating the visual plot is in accordance with said specification; specification is expressed in a language based on a one or more fields from the plurality of fields; language comprises a set of rules and a number of operations; language uses a table algebra; plurality of panes comprises a plurality of rows and a plurality of columns; each field in said plurality of fields has a plurality of levels, and wherein a first level from said plurality of levels is represented by a first component of said visual plot and wherein a second level from said plurality of levels is represented by a second component of said visual plot, wherein said first component and said second component are not the same as one another, and said first component and said second component may be from the same field or from different fields; first component and said second component are each independently selected from the group consisting of: one or more rows in said visual plot, one or more columns in said visual plot, one or more layers in said visual plot, an axis of said visual plot, a graphic in said visual plot, and a level of detail of a graphic in said visual plot; first component is said plurality of rows and said second component is said plurality of columns; first component is said plurality of rows and said second component is said plurality of layers; first component is said plurality of columns and said second component is said plurality of layers; first type is selected from the group consisting of: time, numerical, categorical, and geolocational; first type is time; first type is numerical, and said mark is shape; first type is categorical, and said mark is text; first type is geolocational; first axis is an angular polar coordinate, and said mark is a segment of a pie chart; mark is

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US05/43937

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

selected from the group consisting of: text form, bar chart, pie chart, 3-dimensional bar-chart, 3-dimensional projection, hologram, Gantt plot, and scatterplot; specification comprises an algebraic expression that includes an operand; the dataset is a hierarchical database, and said algebraic expression represents an operation on said hierarchical database; specification comprises a first algebraic expression for said plurality of rows and a second algebraic expression for said plurality of columns; specification further organizes said plurality of panes into a plurality of layers; and said specification further comprises a third algebraic expression for said plurality; first component of said visual plot is a first axis of said visual plot and said second component of said visual plot is a second axis of said visual plot; one of said first level and said second level represents a time period; time period is any one of: a year, a quarter, a month, a week, a day, an hour, a minute, or a second; panes additionally has a second axis that corresponds to a second field from said plurality of fields and wherein said second field has a second type; first axis and said second axis are orthogonal to one another; first axis and said second axis are disposed at an angle to one another wherein said angle is less than  $180^\circ$  and is other than  $90^\circ$ ; first axis and said second axis are subjected to a transformation selected from the group consisting of: rotation, reflection, inversion, and shear; first type and said second type, together, form a pane type, and wherein a rule is associated with said pane type; assigning a pane type to each pane is according to said first type and a second type of said second field; first type and said second type are independently selected from the group consisting of: time, numerical, categorical, and geolocational; both of said first type and said second type are ordinal, and said mark is text; both of said first type and said second type are numerical, and said mark is a shape; and said mark is a map symbol; one mark is assigned to each tuple in said plurality of tuples; a mark is formed from more than one tuple in said plurality of tuples; the mark is a polygon; panes additionally has a third axis that corresponds to a third field from said plurality of fields, and said mark is a 3-dimensional mark.

Fellenberg et al. teaches method of forming a visual plot using a dataset having a plurality of fields, wherein the dataset contains data that comprises a plurality of tuples, the method comprising: organizing the visual plot into a plurality of panes, wherein each of said panes has at least a first axis and wherein said first axis corresponds to a first field from said plurality of fields; assigning a pane type to each pane in said plurality of panes according to a first type of said first field determining a mark for each pane based on said pane type; and populating the visual plot with said data; dataset is a database; the database is a relational database; the database is a hierarchical database; database is an unstructured database; querying the dataset to obtain retrieved data, and wherein the visual plot is populated with said retrieved data; retrieved data comprises a set of tuples; populating said visual plot comprises associating each tuple of said set of tuples with a pane in said plurality of panes; organizing the visual plot is in accordance with a specification; populating the visual plot is in accordance with said specification; specification is expressed in a language based on a one or more fields from the plurality of fields; language comprises a set of rules and a number of operations; language uses a table algebra; plurality of panes comprises a plurality of rows and a plurality of columns; each field in said plurality of fields has a plurality of levels, and wherein a first level from said plurality of levels is represented by a first component of said visual plot and wherein a second level from said plurality of levels is represented by a second component of said visual plot, wherein said first component and said second component are not the same as one another, and said first component and said second component may be from the same field or from different fields; first component and said second component are each independently selected from the group consisting of: one or more rows in said visual plot, one or more columns in said visual plot, one or more layers in said visual plot, an axis of said visual plot, a graphic in said visual plot, and a level of detail of a graphic in said visual plot; first component is said plurality of rows and said second component is said plurality of columns; first component is said plurality of rows and said second component is said plurality of layers; first component is said plurality of columns and said second component is said plurality of layers; first type is selected from the group consisting of: time, numerical, categorical, and geolocational; first type is time; first type is numerical, and said mark is shape; first type is categorical, and said mark is text; first type is geolocational; first axis is an angular polar coordinate, and said mark is a segment of a pie chart; mark is selected from the group consisting of: text form, bar chart, pie chart, 3-dimensional bar-chart, 3-dimensional projection, hologram, Gantt plot, and scatterplot; specification comprises an algebraic expression that includes an operand; the dataset is a hierarchical database, and said algebraic expression represents an operation on said hierarchical database; specification comprises a first algebraic expression for said plurality of rows and a second algebraic expression for said plurality of columns; specification further organizes said plurality of panes into a plurality of layers; and said specification further comprises a third algebraic expression for said plurality; first component of said visual plot is a first axis of said visual plot and said second component of said visual plot is a second axis of said visual plot; one of said first level and said second level represents a time period; time period is any one of: a year, a quarter, a month, a week, a day, an hour, a minute, or a second; panes additionally has a second axis that corresponds to a second field from said plurality of fields and wherein said second field has a second type; first axis and said second axis are orthogonal to one another; first axis and said second axis are disposed at an angle to one another wherein said angle is less than  $180^\circ$  and is other than  $90^\circ$ ; first axis and said second axis are subjected to a transformation selected from the group consisting of: rotation, reflection, inversion, and shear; first type and said second type, together, form a pane type, and wherein a rule is associated with said pane type; assigning a pane type to each pane is according to said first type and a second type of said second field; first type and said second type are independently selected from the group consisting of: time, numerical, categorical, and geolocational; both of said first type and said second type are ordinal, and said mark is text; both of said first type and said second type are numerical, and said mark is a shape; and said mark is a map symbol; one mark is assigned to each tuple in said plurality of tuples; a mark is formed from more

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.  
PCT/US05/43937

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

than one tuple in said plurality of tuples; the mark is a polygon; panes additionally has a third axis that corresponds to a third field from said plurality of fields. and said mark is a 3-dimensional mark.

Becker teaches method of forming a visual plot using a dataset having a plurality of fields, wherein the dataset contains data that comprises a plurality of tuples, the method comprising: organizing the visual plot into a plurality of panes, wherein each of said panes has at least a first axis and wherein said first axis corresponds to a first field from said plurality of fields; assigning a pane type to each pane in said plurality of panes according to a first type of said first field determining a mark for each pane based on said pane type; and populating the visual plot with said data; dataset is a database; the database is a relational database; the database is a hierarchical database; database is an unstructured database; querying the dataset to obtain retrieved data, and wherein the visual plot is populated with said retrieved data; retrieved data comprises a set of tuples; populating said visual plot comprises associating each tuple of said set of tuples with a pane in said plurality of panes; organizing the visual plot is in accordance with a specification; populating the visual plot is in accordance with said specification; specification is expressed in a language based on a one or more fields from the plurality of fields; language comprises a set of rules and a number of operations; language uses a table algebra; plurality of panes comprises a plurality of rows and a plurality of columns; each field in said plurality of fields has a plurality of levels, and wherein a first level from said plurality of levels is represented by a first component of said visual plot and wherein a second level from said plurality of levels is represented by a second component of said visual plot, wherein said first component and said second component are not the same as one another, and said first component and said second component may be from the same field or from different fields; first component and said second component are each independently selected from the group consisting of: one or more rows in said visual plot, one or more columns in said visual plot, one or more layers in said visual plot, an axis of said visual plot, a graphic in said visual plot, and a level of detail of a graphic in said visual plot; first component is said plurality of rows and said second component is said plurality of columns; first component is said plurality of rows and said second component is said plurality of layers; first component is said plurality of columns and said second component is said plurality of layers; first type is selected from the group consisting of: time, numerical, categorical, and geolocational; first type is time; first type is numerical, and said mark is shape; first type is categorical, and said mark is text; first type is geolocational; first axis is an angular polar coordinate, and said mark is a segment of a pie chart; mark is selected from the group consisting of: text form, bar chart, pie chart, 3-dimensional bar-chart, 3-dimensional projection, hologram, Gantt plot, and scatterplot; specification comprises an algebraic expression that includes an operand; the dataset is a hierarchical database, and said algebraic expression represents an operation on said hierarchical database; specification comprises a first algebraic expression for said plurality of rows and a second algebraic expression for said plurality of columns; specification further organizes said plurality of panes into a plurality of layers; and said specification further comprises a third algebraic expression for said plurality; first component of said visual plot is a first axis of said visual plot and said second component of said visual plot is a second axis of said visual plot; one of said first level and said second level represents a time period; time period is any one of: a year, a quarter, a month, a week, a day, an hour, a minute, or a second; panes additionally has a second axis that corresponds to a second field from said plurality of fields and wherein said second field has a second type; first axis and said second axis are orthogonal to one another; first axis and said second axis are disposed at an angle to one another wherein said angle is less than 180° and is other than 90°; first axis and said second axis are subjected to a transformation selected from the group consisting of: rotation, reflection, inversion, and shear; first type and said second type, together, form a pane type, and wherein a rule is associated with said pane type; assigning a pane type to each pane is according to said first type and a second type of said second field; first type and said second type are independently selected from the group consisting of: time, numerical, categorical, and geolocational; both of said first type and said second type are ordinal, and said mark is text; both of said first type and said second type are numerical, and said mark is a shape; and said mark is a map symbol; one mark is assigned to each tuple in said plurality of tuples; a mark is formed from more than one tuple in said plurality of tuples; the mark is a polygon; panes additionally has a third axis that corresponds to a third field from said plurality of fields. and said mark is a 3-dimensional mark.

Gagnon et al. teaches a method of forming a visual plot using a dataset having a plurality of fields, wherein the dataset contains data that comprises a plurality of tuples, the method comprising: organizing the visual plot into a plurality of panes, wherein each of said panes has at least a first axis and wherein said first axis corresponds to a first field from said plurality of fields; assigning a pane type to each pane in said plurality of panes according to a first type of said first field determining a mark for each pane based on said pane type; and populating the visual plot with said data; dataset is a database; the database is a relational database; the database is a hierarchical database; database is an unstructured database; querying the dataset to obtain retrieved data, first axis and said second axis are orthogonal to one another; first axis and said second axis are disposed at an angle to one another wherein said angle is less than 180° and is other than 90°; first axis and said second axis are subjected to a transformation selected from the group consisting of: rotation, reflection, inversion, and shear; first type and said second type, together, form a pane type, and wherein a rule is associated with said pane type; assigning a pane type to each pane is according to said first type and a second type of said second field; first type and said second type are independently selected from the group consisting of: time, numerical, categorical, and geolocational; both of said first type and said second type are ordinal, and said mark is text; both of said first type and said

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/US05/43937

**Supplemental Box**

In case the space in any of the preceding boxes is not sufficient.

second type are numerical, and said mark is a shape; one of said first type and said second type is ordinal, one of said first type and said second type is numerical, and said mark is a bar; one of said first type and said second type is ordinal, one of said first type and said second type is time, and said mark is Gantt; first type and said second type is time, one of said first type and said second type is numerical, and said mark is a line; one of said first type and said second type is geolocational Combination teaches applicant's claimed invention therefore they do obviate.